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A Comparison of the Reading Skills of Grade One Students in French Immersion and Regular English Classrooms

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Introduction

French Immersion has become an important educational alternative for many English speaking children in Canada over the last decade (Shapson & Kaufman, 1978; Stern, 1977; Genesee, 1979). French Immersion is generally of three types: early, beginning in kindergarten; later, beginning in grade 7; or partial, when both English and French are taught in the early grades. The general goal of these three different immersion programs are the same. Through participating in a French Immersion program children should gain a high level of French competency, without endangering their native language skills, their cognitive development, or general educational progress (Day, 1978).

Early Immersion begins in kindergarten and continues throughout the children's schooling. From kindergarten to grade 3 the only language of instruction is French. Beginning in grade 3, or in some school districts grades 2 or 4, a daily lesson in English Lnaguage Arts is introduced to the children. As these early immersion children progress through elementary school, more of the curriculum is taught in English until a balance is reached between the two languages in the upper immediate grades. At this level, and for the remainder of their schooling, the children receive approximately half of their instruction in French and half in English. (Swain 1974, 1978; Day, 1978).

Late Immersion programs generally begin in grades 6 or 7. As in an early immersion program, the only language of instruction is French, with the exception of English Language Arts. English Language Arts is taught as a separate subject area to late immersion students. All other subjects are taught in French (Swain 1974, 1978).

In a partial immersion program half the instructional day is given in

French and the other half in English. English reading is usually introduced in grade 1. French reading is then introduced in grade 2, only after some English reading skills have been established (Swain 1978).

Only the first immersion program, early immersion, is of concern in this study. One unique feature of early immersion programs is that children in the primary grades are first taught to read and write in French rather than in their first language, English. English Language arts is introduced in the later primary grades after reading and writing in French is well established for these children.

Several investigators (Lambert & Tucker, 1972; Barik & Swain, 1975; Swain & Lapkin, 1981; Netten & Spain, 1983) have studied French immersion students' ability to transfer their reading skills learned with French materials to reading English materials. All previous research has shown that as children progress through the primary grades in French Immersion their reading skills improve. Characteristically, researchers find a large gap in English reading ability between grade 1 French immersion students and their English peers, a slightly smaller gap between the two groups at the grade 2 level and, finally, no gap at the grade 3 or 4 level when approximately one hour per day of English Language Arts instruction is introduced to the French Immersion students. All this previous research has used standardized achievement tests (e.g., Metropolitan Achievement Test and the Canadian Tests of Basic Skills) to evaluate reading ability. While a standardized test can demonstrate the characteristic lag of grade 1 and grade 2 French Immersion students in reading English, it cannot specify the differences in reading skills between children in French Immersion and regular English classrooms.

The purpose of this present study was to specify those differences in English reading skills between grade 1 children in French Immersion and

regular English classrooms. Further to describing these differences, this study examined how grade 1 French immersion children used those reading skills acquired in French Immersion classes to read materials written in their first language, English. Through a thorough examination of the children's English reading performance, insights can be made as to how the children are transferring their French reading skills to English at the grade 1 level. Their English reading can illustrate exactly what elements of reading French can be appropriately transferred to reading English and what elements interfere with reading English.

Because the children involved in this present study are learning to read in French, it was expected that they would often inappropriately transfer their newly learnt skills to English: it was expected that these children would often decode and encode many English words as if they were French words and that this would result in poorer comprehension. Also, because these children have not formally been taught any English reading skills in school as yet, it was expected that the only strategies they could use to read English would be French reading strategies and any reading strategies they learnt at home prior to grade 1. The inappropriate transfer of French reading skills to English reading and a lack of knowledge of English reading skills would explain the large gap in English reading ability found between grade 1 French Immersion students and their English peers.

This study also evaluated the effect of parental involvement in reading on the transfer of French reading skills to reading English. Because French Immersion students generally transfer their French reading skills to reading English by grade 3, researchers have been interested in the influence parents of children in French Immersion have on their children's reading development (Edwards, 1976; Barik & Swain, 1976; Cummins, 1977). Although questions

concerning parental influence have arisen in the past, and some school districts have cautioned parents of French Immersion students against teaching their children to read English at home to avoid confusing the children (Lambert & Tucker, 1972; D'Angeljan & Tucker, 1971), the research to this time has not specified what kind of help with English reading, if any, parents are giving their children who are in French Immersion programs.

Finally, the relationship between certain classroom Language Arts activities and the transference of reading skills from French to English is considered.

Review of the Literature

French Immersion is becoming a widely accepted alternative form of education across Canada (Shapson & Kaufman, 1978; Stern, 1977; Genesee, 1979). In British Columbia the number of children attending French Immersion has grown from barely 300 in 1973-74 to more than 7,000 students in 1983 (personal communication, Ministry of Education).

Early Immersion begins in kindergarten and continues throughout the child's schooling until grade 12. During the initial primary years of schooling, from kindergarten to grade 3, the native English speaking child is "immersed" into the French language. The only language of instruction from kindergarten through grade 2 is French; no English is used by the teacher (Day, 1978). In kindergarten and the beginning of the first grade the children generally speak English amongst themselves, but by the end of grade 1, teachers expect that French will have become the total language of the classroom in use between teacher and student and amongst students themselves (Swain & Barik, 1973).

English Language Arts is generally introduced as a separate subject in grade 3 (Day, 1978; Swain, 1974), although variations do occur. In some school districts English Language Arts is introduced as early as grade 1 or as late as grade 4 (Swain, 1974).

French Immersion has become a viable alternative form of education simply because it does work. Children do become bilingual without showing any harmful effect on their native language skills (Swain & Lapkin, 1981).

There exists an extensive body of longitudinal research which supports this claim. This abundance of research which builds an unquestioning basis in favour of Early French Immersion began with a group of English speaking parents in St. Lambert, Quebec, who believed it was essential for their

children to be bilingual in Canada (Lambert & Tucker, 1972). Although the French Immersion program at St. Lambert was not the first of such programs in Canada, it is the first in a series of programs where the children involved have been assessed yearly in French Language Arts, English Language Arts and Mathematics, and where this research has been well documented. Prior to St. Lambert the first French Immersion program in Canada was offered at a Toronto private school in 1962 (Barik & Swain, 1978). However this earlier program, unlike the St. Lambert project where parents and researchers took the opportunity to gather information about the effects of French Immersion on children, offers no such information.

The St. Lambert project (Lambert, Tucker, 1972; Lambert, 1974) began in 1965 with a kindergarten French Immersion class in St. Lambert, Quebec. This group of children and the following year's kindergarten class became the two experimental groups upon which all subsequent research on French Immersion programs across Canada has been based.

These two experimental groups were compared with two control groups: an English speaking group in a regular English classroom and a French speaking group in a regular French classroom. In the spring of each year, as the children progressed through school, a battery of tests was administered to measure and compare various areas of achievement. These included English Language Arts, French Language Arts, Mathematical Skills, Intelligence Tests, Cognitive Flexibility and Creativity. Of interest here are the results of the testing of English Language Arts, particularly reading, of those French Immersion students.

The parents of the St. Lambert program were urged not to teach their children to read English at home (D'Anglejan & Tucker, 1971). However, as one might well suspect in an experimental program of this nature, the parents were

concerned about their children's English Language skills. Because of parental concern and researcher's interest the children were given extensive tests in each subject area each year.

At the end of grade 1, the children's English reading ability was measured using suitable subtests from the Metropolitan Achievement Test (MAT): word knowledge, word discrimination, and comprehension. These tests showed that the French Immersion children did lag behind their grade 1 peers in a regular English classroom in reading English. However, this was hardly surprising as the children had no English reading instruction at this time.

However, at the end of grade 2, the year during which these children were given two 35 minute English Language Arts lessons each day, the French Immersion children were able to read English as well as the control group. Again the same subtests of the MAT were administered and showed no significant differences between the two groups in reading. The only difference revealed was on a new subtest, spelling.

As in grade 2, in grade 3 the children received two 35 minute English Language Arts lessons per day. When the MAT was administered at the end of grade 3, again there were no significant differences in English Language Arts between the English and French Immersion groups, with the exception of punctuation. The overall English language competence of the French Immersion group by the end of grade 3 was judged to be equal to that of the English Control group. Thus, we see that "children trained to read in a non-native language are very efficient at transferring the basic skills to the native language" (Lambert & Tucker, 1972, p. 36).

Several similar studies have followed the initial St. Lambert Project. Generally, in each study two or three cohorts of Early French Immersion

students are tested each spring to determine their English Language Arts abilities as well as their abilities in French and Mathematics. Usually the French Immersion groups are compared to similar groups in regular English and regular French classes. Each study has served to reaffirm and strenghten the St. Lambert findings: that by the end of grade 3, English speaking children who have participated in an Early French Immersion Program show no detrimental effects on their English reading ability.

The Ottawa - Carleton Study (Barik & Swain, 1975, 1978) began in 1970 and differed from the St. Lambert Project in that it did not study only two experimental classes of children but instead, three cohorts of children each of which contained approximately 200 children were studied. Again the children were tested at the end of each school year to determine their English Language Arts abilities. At the end of Kindergarten, English Reading Readiness was assessed by using the Short Form of the Clymer Barret and the Primer subtest of the MAT. On both tests the French Immersion children were shown to be at the same level of readiness as their English peers except on the letter recognition and the sounds subtests in which the Immersion group scored significantly lower than the English group. At the end of grade 1 the same subtests of the MAT as in the St. Lambert Project, or similar subtests of the Canadian Test of Basic Skills (CTBS) were administered to these children, and again the French Immersion scored well below the English group. However, at the end of grade 2, after the French Immersion children had been receiving 60 minutes per day of English Language Arts instruction, reading test results demonstrated that the children's English reading ability had caught up to that of their English peers.

The Ottawa Roman Catholic Separate School Board program (Edwards, 1976) differs slightly from the other Immersion programs discussed so far in that

the Kindergarten program was a full day rather than a half day program. One-half of the Kindergarten day was spent in French Immersion and the other half was spent in regular English Kindergarten. Also, unlike the Ottawa - Carleton and St. Lambert Projects, where English Language Arts was introduced in grade 2, here English Language Arts was not introduced until grade 3. However, again similar results were found in this study when the MAT or CTBS was administered in the Spring of each year. The French Immersion children in this program matched their English peers in English Language Arts abilities by grade 4 for the first cohort and by grade 3 for the second cohort of children. In grade 4 not only did the French Immersion children catch up to their English peers in English reading skills, the French Immersion groups' scores were significantly higher in English Language Arts than that of the English group.

A study in Montreal, beginning in 1970, again followed three cohorts of children through their schooling in French Immersion (Genesee, 1978). It began in 1970. A battery of tests was administered in the spring of each year. Here again the MAT was used to measure English reading ability. Unlike the St. Lambert and Ottawa-Carleton Programs where English Language Arts was introduced in grade 2, here English was not introduced until grade 3, for one hour per day. Again the French Immersion group scored significantly lower on English reading than their English peers until the children were taught English Language Arts as a separate subject in grade 3. At this time the children quickly learnt English reading skills and, at the end of grade 3, their skills were equal to those of the English comparative group.

Two cohorts of children were studied in Coquitlam, B.C. (Shapson & Kaufman, 1978). This study differed from the previous studies in that it took place in Western Canada, a population which can be viewed as different from

those of Montreal or Ottawa. In B.C. French is not a common language in use by a large proportion of the population and, thus, French immersion students' only opportunity to use their French skills may be during school (Wilton, 1975). The program studied in this research also differed slightly in that the first cohort in kindergarten received 20% of their instruction in English, specifically English Language Arts. After this kindergarten year, all subsequent instruction, including the following year's kindergarten, was in French until grade 3 when the children received English Language Arts lessons. Again the children were tested in kindergarten and found to be comparable to the English group in Reading Readiness skills. Again, in grade 1 and grade 2, when tested using the MAT, the children's English reading ability was significantly lower than the English comparisons group's reading ability. However, the gap between the French Immersions group's and the English group's English reading ability in grade 2 was much less than in grade 1. And by the end of grade 3 the two groups' scores on the MAT did not differ significantly in reading, only in spelling. So "despite the characteristic lags in English Language skills in grades one and two, they attained equivalence with their peers in these skills soon after English Language Arts were introduced into the curriculum in grade three" (Shapson & Day, 1982, p. 13).

The Ontario Studies (Allenby Public Schools, Toronto; Ottawa Board of Education; and Carleton Board of Education; Swain & Lapkin, 1981) are a culmination of studies done in three separate school districts over nine years. Results from 38 separate administrations of the Canadian Test of Basic Skills (CTBS) show that in grade 1 the French Immersion children's reading of English is much poorer than their English peers', that in grade 2 the Immersion children are beginning to close the gap between their reading

ability and the English groups', and that by grade 3 the gap is virtually closed. By grade 3 or 4 the French Immersion children can read English as well as, and in some cases better than, their English peers.

The Newfoundland research (Netten & Spain, 1983) began in 1980 with the first group of kindergarten Immersion students. In Newfoundland, as in the Montreal and Coquitlam programs, English Language Arts was not introduced to the French Immersion children until grade 3. The Gates MacGinitie Reading Survey (1980) was used as a measure of English reading ability, and again the same pattern emerged. First, in grades 1 and 2 the French Immersion children score significantly below those children in a regular English classroom (RE), and second, "the English Language Reading skills of the FI pupils are similar to those of their RE peers by the end of Grade Three", (Netten & Spain, 1983, p. 19).

These studies all serve to confirm the same assertion: that French Immersion does indeed work and that children do not suffer in their English reading ability. This current research does not question this fact. It attempts to illustrate how the children begin to transfer their skills at the grade 1 level from reading French, the language of instruction, to reading English, their native language.

Methods of Assessment

All the major research concerned with studying French Immersion has consistently used group standardized reading tests to assess the children's English reading ability. Suitable subtests of the Metropolitan Achievement Test, Canadian Test of Basic Skills or the Gates MacGinitie Reading Survey have been used to make this assessment. Because these standardized tests have been used consistently to measure English reading ability, comparisons could be made between different groups of children and between different studies,

all conducted in different places at different times (Swain & Lapkin, 1981; Swain, 1978b). Standardized testing allows large numbers of children to be tested simultaneously and is easily scored. It also tends to measure just those aspects of reading which are easy to test (Swain & Lapkin, 1981). Test results have shown that a complete transfer of reading skills occurs once English Language Arts is introduced into the curriculum. And the results show that transference from reading French to reading English steadily increases during the early grades, even before English Language Arts instruction is introduced. But, this kind of test cannot show specifically what elements are transferred by the children from reading French to reading English in the first years of learning to read.

Tucker (1975), in discussing the St. Lambert Project and, more specifically, the development of reading skills amongst those grade 1 Immersion students, said that "an inspection of the Experimental pupils' performance on the various sections of the MAT was not particularly revealing" (p. 54). The MAT showed that the Immersion students did not read English as well as the English students but it could not reveal what they could read or could not read because the test is not designed to reveal specifics about reading ability but rather to show groups trends.

Genesee (1979) discussed the lack of information on transference from reading French to reading English during the primary grades of Immersion schooling. He too claimed that the trends revealed through assessments using standardized tests have shown that transfer between the two languages occurs even before English Language Arts is introduced as a subject, and that once English Language Arts is introduced, the catch-up in English reading skills is done very quickly by French Immersion studens. However, he stated that "we do not know, ... precisely what is being transferred" (Genesee, 1979, p. 74).

Genesee suggested that in transferring reading skills from one language to another, the syntactic and semantic aspects of reading would be easier for the child to transfer than the "technical" aspects of reading such as spelling or sound-symbol relationships.

Because French Immersion students are native speakers of English, one would expect the syntactic and semantic aspects of reading English to be readily transferable from learning to read in French. However, because these children first learn the sound-symbol relationships in French, and because much of this code would not be appropriate to transfer to English reading due to differences in sound-symbol relationship between the two languages, interferences from reading French to reading English may well be expected on these "technical" aspects of reading.

Parental Attitudes

As mentioned earlier, the parents of the children in the St. Lambert Project were urged not to teach their children to read English at home (Lambert & Tucker, 1972; D'Angeljan & Tucker, 1971). However, how their children will learn to read English is a primary concern of those parents whose children are in French Immersion (Day, 1978; Swain & Lapkin, 1981). Many of the studies cited have questioned whether parental influence and teaching have contributed to the easy transfer from reading French to reading English. Edwards (1976), in the Ottawa Roman Catholic School study, claimed that the progress made in English reading skills at the grade 2 level by the French Immersion students was more than the researchers had anticipated. He questioned whether or not this progress was due to parents teaching their children to read English at home. Barik and Swain (1976), in discussing the considerable transfer of reading skills to English at the grade 1 level, also suggested that English reading may have been taught at home. Cummins (1977),

in studying an Immersion program in Ireland where Irish was the language of instruction for native English speaking children, also found an easy transfer in reading skills between these two languages. He suggested that parents of the Irish immersion students filled the gaps from learning to read in Irish to reading in English. Cummins suggested that parents involved in Immersion programs of any language are generally middle class, take an interest in their children's schooling, encourage interest in books, and read to their children before their children begin school and continue to do so after they are in school. He claimed that "the rapid transfer of reading skills from L_2 (Language 2) to L_1 (Language 1), observed in virtually all immersion programs where reading is introduced in L_2, may be, in part, a function of parental involvement in the reading process" (Cummins, 1977, p. 49).

Genesee (1979) suggested that another reason for the easy transference of reading skills from French to English by immersion students in the primary grades that English is a "high prestige language." By this Genesee meant that English is not only the immersion child's first language, but it is a language which is highly regarded in both the home and the community. The immersion child needs to read in English as well as in French. Genesee suggested that transference of reading skills from a second to a first language may not be as easy or as complete if the first language is a "low-prestige language." Perhaps this is because parents are more likely to help their children to learn to read their first language if it is a "high-prestige" language such as English.

McEachran (1980), in a recent survey in Victoria, B.C. of parents of French Immersion children, reported that most parents did not find their children's English Language skills suffering as a result of being taught in French. Research has given support to these parents' observations: children

who attended French Immersion classes did not seem to have any difficulty in learning to read their native language, English.

Methodology

Grade 1 French Immersion (FI) students in the North Vancouver School District were tested to examine their English reading strategies. A comparison group of regular English (ENG) grade 1 children was also tested. Both the FI and ENG groups' pre-reading skills had been previously assessed at the end of their kindergarten year, May 1982 (Rauch, 1982), using the Letter and Word Reading Test, (LWRT) (McCormick and Mason, 1981). In this current research the children's English reading skills were assessed using The Reading and Decoding Test (RDT), an instrument based on the LWRT but designed particularly for this research. An oral reading test and a silent reading comprehension test were also administered. The teachers of the FI and ENG groups were interviewed about their classroom Language Arts program. A sample of ENG and FI parents were interviewed about their attitudes towards reading and how they help their children with learning to read.

Sample

Grade 1 FI children, grade 1 ENG children, their teachers and their parents provided the information for this research. All the children attended school in the North Vancouver School District. The FI children (n=50) attended 4 different classes at 2 different schools, and the ENG children (n=56) attended 7 different classes at 3 different schools. The schools were judged by school district personnel to be similar in socio-economic composition, upper middle class.

Because this current research is part of a larger study which is looking at the development of reading skills in FI students throughout the primary years, from kindergarten to grade 3, the children who were tested in this study were limited to those who had been previously tested at the end of kindergarten. The kindergarten groups consisted of 52 FI students and 59 ENG

students. Through attrition 2 children from the FI group and 3 children from the ENG group were lost from the sample.

All the children's teachers were interviewed. There were 4 FI teachers from the 2 different schools and 7 ENG teachers from the 3 different schools.

A stratified random sample of FI and ENG parents were interviewed. This sample was chosen to reflect the number of children in the sample from both the FI and ENG groups, and to reflect the number of children from the 11 different classes at the 5 different schools. Twenty FI parents and 26 ENG parents were interviewed.

Measurement Instruments

Table 1 lists the 5 measurement instruments used in this research. Included in this table is information about the group to whom the instrument was administered and when it was administered. Each of these measurement instruments will be fully discussed in the following sections of this report.

TABLE 1

Summary of Information Collected

Instrument	Administered to	Date of Administration
Reading and Decoding Test	Grade 1, FI and ENG children	May - June 1983
Oral Reading Test	Grade 1, FI and ENG children	May - June 1983
Maze Test	Grade 1, FI and ENG children	May - June 1983
Teacher Interview	The 4 FI and 7 ENG teachers of those children administered the reading tests	May - June 1983
Parent Interview	A sample of FI and ENG parents of the above children	June - July 1983

Reading and Decoding Test

The Reading and Decoding test used in this current research was based on McCormick and Mason's LWRT (1981) and Rauch's LWRT (1982). Rauch's LWRT was used to assess the pre-reading skills of the FI and ENG groups at the end of kindergarten. Changes were made to this pre-reading test to meet the following criteria:

1. The test had to be suitable for grade 1 children after one year of reading instruction.
2. The test had to illustrate clearly the instances where French reading skills may interfere with reading English or where that skill may transfer to reading English.
3. The test had to measure the range of reading abilities in both the FI and ENG groups.

Four subtests from the original LWRT were chosen: Reading Common Words, Spelling Common Words, Reading Consonant Sounds, and Reading Vowel Sounds. The other subtests (Picture Identification, Letter Name Identification, Picture Story, Common Words in Context, Printing and Book Handling) were omitted because these were pre-reading rather than reading tasks.

Each of the chosen subtests was modified to meet the above criteria. This was done by considering both the ENG reading program, Ginn's Reading 720 (Clymer et al., 1978) and the FI reading program, Le Sablier, as well as ensuring, through phonetic analysis, that suitable patterns for grade 1 children were being tested and that those patterns would demonstrate any interference or transfer from French reading instruction. Thus, more difficult high frequency words were added to the Reading Common Words subtest; the Spelling Common Words subtest was expanded to include all short vowels, several common consonant blends and digraphs, and the CVCE pattern; and the Reading Consonant sounds subtest was made more difficult by including consonant blends and digraphs as well as more difficult single consonant sounds. The Reading Vowel Sounds subtest was left virtually unchanged as the CVC pattern, CVCE pattern, suitable vowel digraphs and diphthongs, and the R-controlled vowels were included in the original LWRT. The only changes made in this subtest were in the beginning and ending consonants of the make-believe words because, in some cases, the English make believe words were real French words (e.g., PERE changed to NERE).

This new test, the Reading and Decoding Test, was pretested in 2 different pilot tests. The first pilot test was done in Coquitlam, B.C. and in Abbotsford, B.C. In Coquitlam 5 FI students ranging in French reading ability from high to low, as assessed by their classroom teacher, were administered the test. In Abbotsford 5 ENG children, again ranging in English

reading ability from high to low, as assessed by their teacher, were administered the test. The FI classroom teacher was also consulted about test items and their suitability for assessing FI children's English reading ability.

This first pilot test revealed that the range of reading abilities of the ENG group was not adequately measured, and that although all the desired phonetic patterns were being tested, the test was too long and the children became very tired. Therefore the test was shortened. In the Reading Common Words subtest several items were omitted (i.e., sight words from the Ginn 720 program) and more difficult items were added in order to discriminate between good and poor readers. In the Reading Consonant Sounds subtest more difficult blends and digraphs were combined in single words to make the test shorter.

A second pilot test was done in Abbotsford. The test was administered to 4 ENG students, one good reader and three poorer readers, and 2 FI students, both good readers. Following this pilot test changes were again made in length, format, methods of administration and a few individual items. These changes were made to ensure that the children would not become too tired during the testing session and to omit items which caused confusion (i.e., ZACH to ZAST, as CH at the end of a word has several pronunciations, and removing the E from the end of the R-controlled vowels in order to test the simple r-controlled vowel patterns, NERE to NER).

For the final version of the Reading and Decoding Test (see Appendix A), the order of administration of the four subtests was changed. In the pilot tests the Spelling Common Words subtest was administered first whereas in the final version the Reading Common Words subtest was administered first. This change was made because the children were often frustrated with the spelling and found reading the words easier.

Reading Common Words Subtest

This subtest included 20 high frequency words. Each word was confirmed as a high frequency words in The Word Frequency Book (Carroll, 1971) and each word was also included in the Dolch List. These words were typed in lower-case letters in primary print on 2 by 11 inch white paper and laminated. This subtest included three sections: Fast Reading, Analysis, and Meaning Response. In the Fast Reading section, the children were told they were going to read a list of English words and that they were to read the list as fast as they could; if they could not read a word they were simply to say "skip it" and go on to read the next word. The examiner read a different list of words to illustrate the instructions. The child was then given a list to read. All reading was tape recorded. The number of words read correctly and the time taken by the children to read the list of words was recorded.

After the children had completed the Fast Reading section they were given the Analysis section of this subtest. Here the children were instructed to read the same list of 20 words again only this time they were told they could "sound out" the words. This Analysis section was included to reveal the decoding strategies which the FI children might use. Again all the responses were tape recorded. Those words pronounced correctly were scored as correct answers. In conjunction with the Analysis section the children were also asked to give a Meaning Response following each word they read. After reading each word the children were to give a word or phrase to indicate that they knew what the word meant (i.e., "TOY": "To play with"). Meaning Responses for CAT and NO were given as examples by the examiner. The Meaning Response was included in this subtest because during the pilot tests it was found that some FI children were reading English words as French words (i.e., CAR as /Ka:r/) and their single word response did not indicate if, in fact, they were

deriving the meaning of the English word CAR even while pronouncing it as a French word. The Meaning Response was included here to check this supposition: if a child read an English word as a French word he may still be deriving the Correct English meaning.

In each of the Analysis and Meaning Response sections of this subtest the children could score a possible 20 points. A discrepancy between the two socres, i.e. a lower score in Analysis and a higher score in Meaning Response, would reflect that the children were making errors in pronunciation but were still deriving the correct meaning of the words.

Spelling Common Words Subtest

This subtest included 8 high frequency words as confirmed in the Word Frequency Book (Carroll, 1961). These words were chosen to include all short vowels except A, which was used as an example in CAT; the CVCE pattern with all vowels; the CH, TH and SH digraphs and the single consonant H because intereference from French was expected on these; and several consonant blends. There was a possible total of 37 points on this subtest. The children's response were recorded. Each letter was scored individually (i.e., MULE would score 4 points, MUL 3 points and MOOL 2 points).

To spell the words the children were given a set of upper case plastic letters arranged alphabetically in a tray. An extra set of vowels were also available for the children to use. The children were instructed to use these letters to spell the dictated words. This procedure for spelling was changed from the pilot tests. In those tests the children were asked to print the words but this seemed to tire them unduly. It was felt that by using plastic letters a better test of spelling would result which would not confuse encoding with penmanship.

An extra set of vowels was included because, although unnecessary to

spell any of the words, during the pilot tests the children often spelled words incorrectly using more vowels than necessary (i.e., MULE as MEUDOL). Therefore, extra vowels were available so as not to limit the possibilities.

Reading Consonant Sounds Subtest

This subtest consisted of 20 make-believe English words. The words were constructed to measure the children's ability to read correctly single consonant sounds, consonant blends and consonant digraphs. Each word consisted of at least 2 consonant sounds, one at the beginning of the word and one at the end of the word (e.g., KNAJ and WRANG). The short vowel A was consistently used to form the words. Only consonant sounds were scored; the vowel sound was ignored. In order to score full points on a consonant blend the children must blend the letters together correctly (i.e., "BLASH" scores 3 points but "BALASH" scores 2 points as the B and L are not blended together). This subtest has a possible total score of 60 points.

The words were typed in lower case primary print on 2 by 11 inch white paper and laminated. The children were told these were make-believe English words and that to read them they could "sound them out". The children's responses were tape-recorded. There was no time limit. Again the children's incorrect responses were recorded to determine the decoding strategies which might be used by the FI children.

Reading Vowel Sounds Subtest

In this subtest 26 make-believe English words were constructed to test the children's ability to read various vowel spelling patterns. Tested here were the CVC pattern, the CVCE pattern, R-controlled vowels and various vowel digraphs and diphthongs which were considered to be familiar to grade 1 English readers. There were 5 sets of vowel patterns. In each set the beginning and ending consonants remained the same (i.e., the CVC pattern read

as VEB, VIB, VAB, VOB, VUB). Only the vowel sound was scored; the consonant sounds were ignored. When reading the CVCE pattern if the final E was sounded, even if the other vowel was read correctly (i.e., /pæbʌ/ or /peibʌ/), the vowel sound was scored as incorrect. Two pronunciations of PUBE were scored as correct: U as in cute or U as in tube. Two pronunciations of FOW were scored as correct: OW as in cow or OW as in yellow.

The words were typed in lower case primary print on 2 by 11 inch paper and laminated. The children were told these were make-believe English words and that to read them they should "sound them out". There was no time limit. The children's responses were tape recorded. Again incorrect responses were recorded to determine FI decoding strategies. There was a possible total of 26 points.

Oral Reading and Comprehension Test

This test was included in the individual testing session to assess the FI children's oral reading of passages and their comprehension of those passages. Also, an examination of the children's oral reading errors was expected to give further indication of the reading strategies used by FI children.

In the first pilot test the Classroom Reading Inventory (Silvaroli, 1965) was used to test oral reading and comprehension. Pre-primer, Primer and Grade 1 reading passages were administered to the 5 FI students. The results from this pilot test showed that the comprehension questions included with these reading passages were not passage dependent; FI children who could not satisfactorily read the passages were still able to answer the comprehension questions.

Because of these pilot test results, on the oral reading comprehension questions, Pre-primer, Primer and Grade 1 passages from the Standard Reading

Inventory, Form A, (McCracken, 1966) were chosen to test oral reading and comprehension. A passage dependency check was conducted in Abbotsford, B.C., on the comprehension questions given for these three passages. Five grade 1 children, judged to be good readers by their classroom teachers, were asked the comprehension questions without having read the story. As a result of this check only one question at the Pre-primer level was altered because it was found not to be passage dependent.

The oral reading subtest administered in this research consisted of three sections:

1. The oral reading of the paragraphs which was assessed in terms of reading rate (WPM), word recognition errors (i.e., those errors which change the meaning of the text), and total accuracy (i.e., the sum of word recognition errors and fluency errors which are all other errors which do not change the meaning of the text - substitutions, repetitions, self-corrections, and some omissions).
2. The comprehension recall section where the children, when having finished reading the passage, were to tell the examiner all they could about the passage. Items recalled by the children, which answered the required comprehension questions, were checked by the examiner.
3. The total comprehension section which was the sum of questions answered through recall and the children's answers to direct questions asked by the examiner. The examiner asked only those questions not answered through recall.

All the children began this subtest by reading the Pre-primer passage. Only if the children scored above 60% on the total comprehension section of the Pre-primer passage were they asked to go on to read the Primer passage. Only those children who scored above 60% on the total comprehension section of

the Primer passage read the final, Grade 1, passage.

The three passages were typed in primary print on 8 by 11 inch white paper and laminated.

The children were asked to read the story aloud and were told that after they had finished reading they should tell the examiner about the story. They were also told that they may be asked some questions. The examiner told the children the name of the story. The only words the children were told during their oral reading were names as this information would not affect the children's comprehension of the story (see Appendix B for Oral Reading and Comprehension Test).

Maze Test

The Maze Test was a test of silent reading comprehension. This test was administered to entire classes of children. It consisted of two reading passages from Getting the Facts (Boning, 1978). Both passages were at the grade 1 reading level according to Botel's method of calculating readability levels (Botel, 1962). Care was taken to choose one story about a boy and one about a girl.

In each of these passages every fifth or seventh word was substituted with a set of 3 words to construct the Maze. One of these three words was correct. The other two choices were syntactically correct. All substituted words were high frequency words according to the Word Frequency Book (Carroll, 1971). The children were to read the story and choose the correct word from each set of choices.

A traditional maze test substitutes every sixth word with a set of three choices (Guthrie, 1973). However, in the two passages used here, when every sixth word was used to construct the maze this resulted in far too many auxiliary verbs being used. Substituting these words with three choices

resulted in a very difficult comprehension test. Therefore, every fifth or seventh word was chosen to construct the maze because these words were usually nouns or verbs, which resulted in a fairer test for grade 1 children.

Each of the two passages was typed in primary print on 8 by 11 inch white paper (see Appendix C for Maze Test).

The children were instructed to read each story silently. They were shown that in seven instances in the first story and eight instances in the second story there were places where they would have to choose a word to complete the passage. The children were told to circle the word, in each of these instances, that made sense in the story. The children were give 10 minutes to complete the task. This was considered to be sufficient time for even the poorest readers. The time taken to complete each passage was recorded on each child's test paper. This was done to ensure that the children actually read the passage and did not simply circle words. If a child scored very poorly on each passage but completed the task very quickly, it was assumed he did not read the passages. However, if a child scored very poorly and took a long time to complete the task it was assumed he attempted to read the passages.

Each word chosen correctly scored as 1. There was a possible total score of 15.

Teacher Interview Schedule

An interview schedule was developed to collect information about the Language Arts activities in their classrooms from all the classroom teachers of the children tested in this research. The following information was collected to determine if differences, other than the language of instruction, existed between FI and ENG classes and to determine if FI teachers were giving the children in their classes any instruction in English Language Arts.

1. Information about the teacher's reading aloud practices.
2. Information about school library use.
3. Information about children's silent reading practices.
4. Information about children's writing practices.
5. Information about FI teacher's instructional time, formal or informal, spent on English Language Arts.

Parent Interview Schedule

A parent interview schedule was developed to collect information about parents' attitudes towards reading and the kind of help parents were giving their children with reading. The information was collected to determine if differences existed between ENG and FI parents and if FI parents were helping their children with English Language Arts. The interview schedule was based on similar schedules used by Durkin (1966), Mason (1977), and Rauch (1982). Changes were made because these previous interview schedules were used with parents of pre-schoolers, not parents of grade 1 children, and because the particular interest here was parental influence on English reading skills of FI children.

Information was collected from parents on the following topics:

1. Information about parents' reading aloud practices.
2. Information about children's reading habits at home.
3. Information about families' use of the public library.
4. Information about the child's place in the family.
5. Information about children's television viewing habits.

A stratified random sample of parents from both the FI and ENG groups was interviewed over the telephone.

Procedure

Administration of the Reading and Decoding Test, Oral Reading and Comprehension Test and Maze Test

Letters seeking permission to administer the Reading and Decoding Test, Oral Reading and Comprehension Test and Maze Test were sent home to the parent's of the 50 FI children and the 56 ENG children in May, 1982. (See Appendix D for letters of permission.) All the children returned the letter, and testing began in late May. The author and 2 trained examiners tested the children individually in a quiet spot in the school using the Reading and Decoding Test and the Oral Reading and Comprehension Test. Each child's testing session took approximately 1/2 hour.

The Maze Test was administered to class groups of children. Two different examiners administered this test. One examiner gave it to 2 groups of FI children at one school and to 3 groups of ENG children at 2 different schools. The other examiner administered the Maze Test to 2 groups of FI children at one school and 1 group of ENG children at another school. The Maze Test was administered after all children in a class had completed the individual testing session.

Conducting of Teacher Interviews

All the classroom teachers involved in this study were interviewed by one researcher. These interviews were conducted informally with the interview schedule serving only as a guide. Generally the teachers were interviewed during the time that the children in their classroom were being tested. However, as this researcher did not test children from 4 of the classes, 4 of the teachers' only contact with the researcher was during this interview session.

Conducting Parent Interviews

All the parents in the sample were interviewed by this researcher. The interviews were conducted over the telephone in June and July 1982. These interviews were conducted in an informal manner. Most of the parents were contacted during the day. Efforts were made to contact working parents by phoning in the early evening and parents who were away on holiday by phoning over a two month period. The telephone interview took from 5 to 15 minutes.

Results

The results of the testing of the French Immersion (FI) and English (ENG) children are reported here. Qualitative as well as quantitative analyses were performed. In the following section the data derived from the Reading and Decoding Test, the Oral Reading and Comprehension Test and the Maze Test are described. Information gathered from the Teacher and Parent Interviews is also described.

Reading And Decoding Test

The Reading and Decoding Test consisted of 4 subtests: Reading Common Words, Spelling Common Words, Reading Consonant Sounds, and Reading Vowel Sounds. Five scores derived from these subtests were used to analyze the reading performance of the FI and ENG groups. From the Reading Common Words Subtest two scores were used:1) a ratio of the number of correct words per minute, calculated by dividing the number of words read correctly by the fast reading time, and 2) the number of words read correctly in the Analysis section. The ratio of number of correct words per minutes serves as a good indication of the children's "relative proficiency or degree of automaticity" of decoding subskills (Adams, et al., 1980, p. 14). The Meaning Response scores obtained from the Reading Common Words Subtest were not included in this analysis as the students' scores in this section were almost identical to their scores of the Analysis section of this subtest. The 3 other scores used in this analysis were: 1) the total score from the Spelling Common Words Subtest, 2) the total score from the Reading Consonant Sounds Subtest, and 3) the total score from the Reading Vowel Sounds Subtest.

Statistical analysis of the scores from these 5 measures showed that the ENG group scored reliably better than the FI group (see Table 2).

TABLE 2

Results from the Reading and Decoding Test;

Mean Scores and Standard Deviations

	Mean Scores (Standard Deviations)	
	FI n=50	ENG n=56
Ratio of correct words per minute	14.51* (34.54)	47.43 (39.55)
Analysis of Common Words (max. 20)	7.68* (6.85)	16.45 (3.09)
Spelling of Common Words (max. 37)	23.40* (5.95)	33.20 (2.92)
Reading Consonant Sounds (max. 60)	39.06* (14.51)	53.50 (4.82)
Reading Vowel Sounds (max. 26)	8.60* (4.97)	16.36 (4.75)

*$p < .001$

SUBTEST 1: READING COMMON WORDS

As shown in Table 2, an examination of the mean scores on the Ratio of Correct Words per minute and the number of words read correctly through Analysis obtained by the FI and ENG groups on the Reading Common Words Subtest show that the ENG group's performance was reliably better on this subtest than that of the FI group. Mean scores for all sections of this subtest are reported in Table 3.

TABLE 3

Reading Common Words Subtest; Mean Scores and Standard Deviations

	Mean Scores (Standard Deviations)	
	FI n=50	ENG n=56
Fast Reading of Common Words		
Ratio of Correct Words per minute	14.51* (34.54)	47.43 (39.55)
Time (seconds)**	58.79 (28.57)	26.55 (14.06)
Total Correct (max. 20)	4.88 (6.34)	14.01 (4.63)
Analysis of Common Words (max. 20)	7.68* (6.85)	16.45 (3.09)
Meaning Response	7.62	14.41

*$p < .001$

** In the Fast Reading section, 14 children in the FI group were not instructed to read the list of words as fast as they could. Because of this difference in testing conditions, this group of children did not have a fast reading time. In order to include this group in the analysis, a mean time was calculated for them. Eleven of these children were not able to read any words under the fast reading condition, one child was able to read 2 words, one child 7 words, and one child 9 words. The mean number of seconds required by all those other children in the FI group who read 9 or less words in the Fast Reading section was assigned as the Fast Reading Time for these 14 children.

The reliable difference between the groups on the Ratio measure indicates that the ENG group knew more words as sight words than the FI group, and they were able to read the words faster.

In the Analysis subtest, where the children were permitted to "sound out" the words, the ENG group read correctly about twice as many words as the FI

group. Correspondingly the Meaning Response scores, which are dependent on the children reading the word correctly in analysis, show the ENG group deriving the correct meaning of these words more often than the FI group. The close relationship between the Analysis and Meaning Response scores shows that both groups were able to give a meaning for each word they read.

None of these results was unexpected. All previous research has shown that English-instructed grade one children read English better than French-instructed grade one children (e.g., Swain & Lapkin, 1981). This current research reaffirms these findings.

What is of more interest in this research is the strategies the FI group uses to read English. The reading strategies used by French Immersion grade one children when reading English have not been studied in previous research. The children's errors on this subtest show that approximately 62% of their errors result from their using one of four strategies when reading English words:

1. Producing a French-sounding word by using French decoding skills (36% of the errors)
   (e.g., MUCH /mʌtʃ/ as /myʃ/)*

*An explanation of the way in which the stimuli and children's responses will be reported is in order here. What the children see when reading aloud will be written in capital letters, i.e., MUCH, what the children read aloud will be written in capital letters with quotation marks, i.e., "MOUCHE", and, when appropriate, phonetic symbols will be given in slashes, i.e. / /.

2. Producing a real English word by decoding consonants correctly** (26% of the errors) and

   a) using the French vowel sound (i.e., WIDE as "WEED" /wi:d/).

   b) using the vowel letter name (i.e., BEST as "BEAST" /bi:st/).

   c) guessing at the vowel sound (i.e., WARM as "WORM" /wa:m/).

An additional 5% of the errors involved producing a nonsense word as a result of:

1. spelling the word (i.e. LONG as "ELGEE" /eldʒia/)
2. partially decoding the word, in either French or English (i.e., COW as / K /, WIDE as "WID" /wid /).
3. partially decoding the word using both French and English (i.e., LIGHT as "LEEGET" /li:get/.

Thirty-three percent appeared to have no strategy to decode a word and thus, gave no response.

We expected that the FI group would often use their French decoding skills to figure out unfamiliar English words, thus producing a French-sounding word (Strategy 1). Analysis of the children's errors show that they did use this strategy when confronted with a word they did not know, but only in about one-third of the instances. Notably, the FI group often pronounced CH /tʃ/ as "SH" /ʃ/ in the words MUCH and CHANGE (35% of the errors on those words); U /ʌ/ as /y/ in reading MUCH (41% of the errors on MUCH); I as "EE" /i:/ in reading GIRL, THINK, and WIDE (30% of the errors on those words); TH

**Although there is a difference between how the consonants D, T, L and R are pronounced in French and English, only the differences in the pronunciation of R are focused on in this research. The differences between the French and English pronunciations of D, T and L are not as obvious as R, and it was assumed that the children, when reading English words with these letters, would recognize the word even if they were using the French sound in their reading.

/θ/ as "T" /t/ in reading THINK (36% of the errors on THINK) and AR as /a:r/ in reading WARM and CAR (32.5% of the errors). So, although the children did use this strategy of reading English words according to French decoding rules, this method was not a strategy favoured over others.

One might expect that, although the children are using French decoding skills and producing a French-sounding word, perhaps the correct English meaning is being derived by the children because they are fluent speakers of English. For example, a child may read CAR as /Ka:r/, but he may be deriving the correct meaning of the word. To determine whether or not this was the case, each child was asked to give a Meaning Response after reading each word. Thus, if a child read CAR as /Ka:r/, with the uvular "R", the Meaning Response would indicate if, in fact, he was meaning the English word CAR even while pronouncing it as a French word. This happened only once. The child did read CAR as a French word but gave a correct meaning response "drive in it".* In all other cases such as this the children did not give any Meaning Response. In a few cases the children said they knew what the word meant in French. For example, when three of the children who pronounced MUCH as "MOUCHE" /muʃ/ gave a Meaning Response of "a fly", they were quick to say that this was what the word meant in French.

There were only 3 instances when the FI children, and 10 instances when the ENG children, pronounced a word correctly but could not give a Meaning Response. With the ENG group this was usually a result of shyness or quietness. But, the FI group's lack of response appeared to be for a different reason as these 3 children were not particularly shy. These 3

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*One would expect, of course that when reading words in context rather than isolation as in this subtest, that FI children would derive the correct meaning and give the correct English pronunciation more often.

children correctly pronounced the word, by using a combination of French and English decoding skills, but because they were not confident in their decoding method, they did not seem sure that they had decoded a real word. Thus, even though a child read ONLY correctly, the pronunciation did not trigger a meaning for him.

Another one-quarter (26%) of the FI group's errors in this subtest consisted of some children producing a real English word by using their limited English decoding skills. Usually they used the initial letter of a word and often the end letter, in combination with one of the following, to decode the vowel: French decoding skills, the vowel's letter name, or a guess at the vowel sound (Strategies 2a, b, or c). Thus TOY was read as "TOE" (33% of the errors on TOY), BEST was read as "BEAST" (39% of the errors on BEST) and WARM was read as "WORM" (19% of the errors on WARM). In all instances the children gave the appropriate meaning response to the word pronounced.

As previously mentioned, 33% of the errors in the Analysis subtest of Reading Common Words resulted because the FI group did not attempt a word at all. The ENG group's errors also consisted of approximately one-third (37%) no attempts. It appears that both groups were equally as likely not to attempt a word when they did not know that word immediately, or when they were not confident in applying their limited decoding skills.

SUBTEST 2: SPELLING COMMON WORDS

In this second subtest, Spelling Common Words, the children were asked to use plastic letters to spell 8 different words. The quantative analysis showed that the ENG group's performance was reliably better than the FI groups's (see Table 2).

Qualitative analyses of the FI and ENG children's performance on spelling

single consonants, consonant digraphs, and short and long vowel sounds are presented in the following sections.

Spelling Single Consonants

Table 4 shows the percent of children in the FI and ENG groups who correctly spelled single consonants. The FI group generally found it easy to choose the correct letter to represent a single consonant sound. As single consonant sounds are very similar in French and English, it appears that the letter representing these sounds is easily transferred, by the FI group, from one language to the other.

TABLE 4

Spelling Single Consonants within a Word, Mean Percent Correct

Letter	Word	Percent Correct FI n=50	ENG n=56
H	HEM	86%	100%
M	HEM, FRAME, MULE	96%	99%
P	CHOP, SLOPE	99%	97%
L	MULE	88%	96%
N	SHINE	92%	98%

Spelling Consonant Blends

The children were asked to spell four words containing the consonant blends SL, FR, STR, and MP.*

*In Spelling Common Words, the word or letters the children are given to spell will be written in capital letters, i.e., SLOPE. The children's responses, what they actually spelled with the plastic letters, will be reported in capital letters and underlined, i.e., SELOP, and when appropriate, phonetic spelling will be given in slashes / /.

The SL and FR blends, both at the beginning of a word, were relatively easy for the FI group to spell (see Table 5). Only 3 FI children chose C rather than S in the SL blend, which is far less than one might expect from a group of French Immersion children. One FI child, in spelling FRAME, used PHR to represent /fr/, showing an advanced understanding of letter-sound relationships.

TABLE 5

Spelling Consonant Blends Within A Word, Mean Percent Correct

Letter	Word	Percent Correct FI n=50	Eng n=56
SL	SLOPE	74%	96%
FR	FRAME	64%	91%
STR	STRING	38%	75%
MP	THUMP	45%	82%

The three letter blend STR at the beginning of STRING was difficult for both the FI and ENG groups. In the FI group, of the 47 errors made on the word STRING, only 1 error was made on the letter S, but 66% were made on the TR blend. The children represented the blend as S, SR or ST. These errors are not a result of the children not knowing which letters represent the individual sounds (see Reading Consonant Sounds), but are more likely a result of their finding it difficult to segment the 3 sounds within the blend. Although the STR blend is used in French, it is unlikely that the children have used it in their writing and, therefore, unlikely that they have had practice segmenting this blend.

The two letter blend MP at the end of THUMP accounted for a major portion

of the FI group's errors on this word (67%). The children correctly identified the P in all but 3 cases, but the M was usually omitted. Again, this error is probably due to a lack of practice in segmenting blends rather than not knowing which letter represents the individual sounds (see Table 4).

Spelling Consonant Digraphs

The letters chosen by the FI group to spell the digraphs shown in Table 6 suggest that they are aware that a special combination of letters is used in English to represent these sounds; they are just not sure which pairs of letters are used for each digraph and in what order. To represent TH /θ/ and CH /tʃ/ the FI group often used H in various combinations with T, S and C or used a single C or H (56.7% of the errors). These errors show the children are aware of English spelling patterns but have not had sufficient exposure to these patterns to use them correctly.

TABLE 6

Spelling Consonant Digraphs Within A Word, Mean Percent Correct

Digraph	Word	Percent Correct FI n=50	Eng n=56
CH	CHOP	32%	89%
TH	THUMP	32%	91%
SH	SHINE	24%	96%
NG	STRING	16%	91%

Another set of errors appear to be related to children's judgement of phonetic similarity among sounds (Read, 1975). Sixteen percent of the children in the FI group represented CH as J, G, or JR, and GR; 18% spelled TH as F or V.

The SH /ʃ/ digraph in SHINE was correctly spelled by only 26% of the FI

group. The majority of errors (73%) resulted from the children using French encoding skills: using CH, C or H, since CH represents the /ʃ/ sound in French.

The NG /ŋ/ digraph in STRING was very difficult for most of the FI group. Only 8 children (16%) chose the correct letters. French does not have this sound, so transfer from French to English is not possible in this instance. Sixty percent of the children in the FI group used N, G, Y, or I to represent this sound. Some (10%) just gave up trying: "I can't remember what makes /ŋ/."

Spelling Short Vowel Sounds In The CVC Pattern

The short vowels E, I, U, and O were tested in the Spelling Subtest (see Table 7). The short vowel A was omitted because it was correctly identified during the pilot testing by all children. In the present study CAT was used as an example, and again all but a few children in the FI and ENG groups were able to correctly spell CAT.

TABLE 7

Spelling Short Vowel Sounds Within Words, Mean Percent Correct

Vowel	Word	Percent Correct FI n=50	Percent Correct ENG n=56
O	CHOP	56%	96%
I	STRING	46%	95%
E	HEM	38%	87.5%
U	THUMP	16%	84%

Short O, like A, was correctly spelled by most of the children. It represents a common sound in both French and English /ɔ/. Thus, here the FI group can successfully transfer their knowledge of French to English.

I, although pronounced differently in French /i:/ and English /ɪ/, and often incorrectly transferred by the FI group in reading (see Reading Common Words and Reading Vowel Sounds), in the spelling subtest was correctly used by 46% of the FI group. This may be because the sound of I /ɪ/ within the word STRING closely resembles the I /i:/ sound in French.

Many of the errors on E in HEM resulted from both the FI (42%) and ENG (85.7%) groups spelling the words HAM or HIM. Whereas these two words are very common to children, HEM is much less so. The children may have thought those were the words dictated. Other FI children spelled HEM as HM (22.5%).

The most poorly identified vowel by both the FI and ENG groups was the short U. This sound /ʌ/ is not common to French and English so transfer is not possible. The FI group used every vowel to represent this sound, and where it was spelled correctly (only 16% of the time), it was probably a good guess.

Spelling Long Vowels In The CVCE Pattern

The CVCE pattern was poorly known by both the FI and ENG groups. In spelling the four words SLOPE, MULE, FRAME and SHINE, the FI groups average score on the CVCE pattern was 15.5% correct compared to the ENG group's score of 60% correct. The ENG group has been taught this pattern, but it obviously has not been fully learned by many. The FI group has not been taught the CVCE pattern. The FI children either spelled the word correctly except for the final E (36% of the errors on these words) or made an error on the vowel, digraph or blend as well as omitting the final E (64% of the errors).

Summary of Spelling Common Words Subtest

As in the Reading Common Words Subtest, the FI group's errors in Spelling Common Words suggest that there is significant transfer from French consonants to English consonants, and that there is significant interference on vowels and common consonant digraphs. In spelling, we also see instances where the

children just don't know which letters to choose (ie. /ʌ/, /ŋ/, and CVCE patterns) because the sound or pattern is not common to both languages. In these cases the FI group has no knowledge to transfer.

SUBTEST 3: READING CONSONANT SOUNDS

In the Reading Consonant Sounds Subtest a list of 25 make-believe English words was given to the children to read. They were instructed to "sound them out". Only the pronunciation of the consonants was scored; pronunciation of the vowels was ignored.

A quantitative analysis of the scores obtained from this subtest shows that the ENG group scored reliably better than the FI group in Reading Consonant Sounds (see Table 2).

Qualitative analysis again shows that, as in the Reading & Spelling Common Words Subtests, single consonants prove to transfer well from French to English. Again, the consonant digraphs TH /θ/ and CH /tʃ/ show French interfering with English reading (see the Reading and Spelling Common Words subtests); and, again, consonant digraphs which are unfamiliar to the FI group, because they are not common to both languages or infrequently used in French, are incorrectly read as the children have had little or no practice reading them. The FI group also shows difficulties in blending together consonant sounds which are familiar as single elements. Because of these difficulties the FI group's scores in Reading Consonant Sounds are lower than the ENG group's.

Although the children knew they were reading make-believe English words, some other instances of the interference of French with English reading surface on this subtest. Some children did not pronounce the final consonant in a word, because that consonant would not be sounded in French (i.e., SHRAX as /ʃræ/). In other cases, the final consonants were sounded in an extremely

exaggerated manner (i.e., MALD as /maldø/. Surfacing more often in this subtest than in the two previous subtests were reading C /K/ as /S/, the French "J" /ʒ/ for /dʒ/, and the uvular French "R".

Single Consonant Sounds

In 15 of 21 cases, over 70% of the FI group correctly read the single consonant sounds (see Table 8). In some instances where the consonant sound was read more poorly, i.e., H, J, and X, interference from French seems to be determining the children's responses. H was often read as "SH" /ʃ/ (47% of the errors). At early reading levels a single H is rarely seen; H usually appears in a CH digraph pronounced as /ʃ/. J /dʒ/ was often given its French pronunciation /ʒ/ (61% of the errors in JANK, 25% of the errors in KNAJ); and X at the end of SHRAX was often not pronounced (42% of the errors), which would be the correct response in French.

Y at the beginning of the word YAPH was the most difficult sound for both groups (FI 46% correct, ENG 86% correct). The FI group confused Y /j/ with "W", gave no response, or read /dʒ/, /v/, or /z/. The /j/ is probably not emphasized in English classrooms and is rarely seen at the beginning of a French word; the FI children may never have had to decode a Y at the beginning of a word before this test. Of the ENG group who erred on Y, 50% of these children pronounced it as /w/. Perhaps these children are simply confused about the sounds represented by the less often used final letters in the alphabet.

C in CLAND and T at the end of several words were read correctly by 74% of the FI group. However, those children erring on these consonant sounds show that French is interfering with their English reading: C /K/ was pronounced as /s/ in 61.5% of the errors and when reading HAPT, VACT, DRANT, and ZAST, the T was not sounded in 62% of the errors.

TABLE 8

Reading Single Consonant Sounds, Mean Percent Correct

	Consonant at Beginning of a Word Percent Correct			Consonant at End of a Word Percent Correct			
	FI Test Word	ENG n=50	n=56		FI Test Word	ENG n=50	n=56
B	BLASH	88%	98%	B	SPLAB	46%	59%
C	CLAND	74%	96%			---	---
D	DRANT	90%	98%	D	CLAND	80%	100%
F	---	---		F	STRAF	70%	93%
G	GRACK	84%	93%			---	---
H	HAPT	66%	98%		---	---	
J	JANK	54%	96%	J	KNAJ	68%	78.5%
K	---	---		K	JANK CHASK	72%	91%
L	--- ---			L	PHALL	78%	100%
M	MALD 94%	96%				---	---
P	--- ---			P	THRAMP	82%	100%
S	SWAV STRAF SPLAB	93%	99%			---	---
T	--- ---			T	HAPT VACT DRANT ZAST	74%	93%
V	VACT	92%	87.5%	V	SWAV	86%	93%
X		---	---	X	SHRAX	46%	87.5%
Y	YAPH	46%	86%			---	---
Z	ZAST	92%	95%			---	---

The FI group correctly read V in VACT slightly better than did the ENG group. V, a more common letter in French than English, and representing the same sound in both languages, transfers very well. B at the end of SPLAB was read poorly by both groups. Those children making errors pronounced B as "D" or "P".

Reading Consonant Blends

On the average the FI group scored approximately 20% lower on consonant blends than they scored on single consonant sounds (see Tables 8 and 9). All the tested consonant blends at the beginning of a word are also used in French, except SW. However, two are only rarely used, STR and SPL. Perhaps because the children are just beginning to read French, they have not had much experience reading any of the blends tested here.

Of the errors in reading SWAV, 59% of the FI group omitted the W. The consonant W can be pronounced as /w/ or /v/ in French, and this may have confused some of the FI children. If W was decoded as /v/, this sound would be repeated within the word and would make it very difficult to read. The blends containing R in GRACK, DRANT, and STRAF revealed the exceptional French accent these children are acquiring: the uvular "R" /ʁ/ was often used. This pronunciation of /ʁ/ was scored as an error for two reasons:

1. The children were told they were reading English and when these children are speaking English they do not use the uvular "R".
2. Some children changed their pronunciation from the uvular "R" to the English "R" after decoding the word.

Of the errors on these 3 R blends, 28% used the uvular "R". Another 25% of the errors resulted from the FI group using the letter name for "R" (i.e., GRACK as "GARACK" /gɑ:æk/.

Lack of practice in blending letters together seems to be the most likely

TABLE 9

Reading Consonant Blends, Mean Percent Correct

Consonant Blends at Beginning of a Word Percent Correct				Consonant Blends at End of a Word Percent Correct			
Cons. Blends	Test Words	FI n=50	ENG n=56	Cons. Blends	Test Words	FI n=50	ENG n=56
BL	BLASH	68%	96%	PT	HAPT	64%	91%
SW	SWAV	66%	82%	NK	JANK	62%	93%
GR	GRACK	54%	95%	LD	MALD	72%	96%
CL	CLAND	64%	91%	MP	THRAMP	68%	98%
DR	DRANT	58%	98%	ND	CLAND	68%	89%
STR	STRAF	54%	93%	CT	VACT	58%	84%
SPL	SPLAB	58%	82%	NT	DRANT	66%	89%
				SK	CHASK	62%	79%
				ST	ZAST	60%	87.5%

explanation for the FI group's difficulty in reading BL, CL, and SPL. Each of the single consonants in these blends was successfully read by the FI group in this subtest (see Table 8). Also the children often read the single consonant sound correctly within the blend, but they could not blend the sounds together (i.e., BLASH as /bæl$\int$/ and SPLAB as /sæplæd/).

Consonant blends at the end of a word showed a similar pattern of errors to those read at the beginning of a word. All the letters but one, N, were tested as single consonant sounds and were read well by the FI group (see Table 8); N was only read in blends. Only on the CT blend in VACT did the FI group score below 60%. Of the errors on this blend, 33% can be attributed to French interference: pronouncing C/K/ as "S" /S/ or /"CH" /$\int$/. Other French interference surfaced when the FI group read HAPT, CLAND, VACT, DRANT and ZAST. Of the errors when reading these final consonant blends, 49% of the children did not sound the final letter. Other errors included inserting a vowel between the two final consonants or omitting the first consonant of the blend. These latter two errors are also common among the ENG group and indicate a lack of practice in blending final consonants.

Reading Consonant Digraphs

Although the FI group did not read the consonant digraphs as well as the ENG group, the digraphs PH, KN and WR were not read well by either group (see Table 10). Because KN and WR are not used in French one would not expect the children to read these digraphs well. PH is used only rarely in French and many of the FI group's errors again show French interfering, with H pronounced as "SH" /$\int$/ (33% of the errors). The uvular "R" surfaced again in 28% of the errors on WR. Errors common to both the FI and ENG groups were sounding out each letter, inserting a vowel between the two members of the digraph, or disregarding one of the consonants.

TABLE 10

Reading Consonant Digraphs, Mean Percent Correct

Beginning of a Word		Percent Correct		End of a Word		Percent Correct	
	Test Word	FI n=50	ENG n=56		Test Word	FI n=50	ENG n=56
TH	THRAMP	38%	95%	TH	WHATH	40%	89%
SH	SHRAX	64%	96%	SH	BLASH	62%	100%
PH	PHALL	26%	39%	PH	YAPH	22%	32%
WR	WRANG	22%	45%			---	---
KN	KNAJ	8%	18%			---	---
CH	CHASK	20%	87.5%			---	---
WH	WHATH	50%	98%			---	---
				NG	WRANG	48%	86%
				CK	GRACK	74%	91%

SH was read correctly by most of the children. This is quite different from the Spelling subtest where only 26% of the FI group chose SH to spell SHINE. So, although SH, as representing /ʃ/, is not firmly established for these children, it is far easier for them to decode these letters than to spell them.

TH at the beginning and ending of a word was read poorly by the FI group, just as it was spelled poorly. The children generally read TH as the French sound "T" /t/ (in THRAMP, 68% of TH errors, in WHATH, 40% of the errors). Some read TH as /tʃ/ (15% of the errors), and the uvular "R" was used by 16% of the children in the THR blend.

CH again showed the greatest amount of French interference on reading English: 54% of the FI group read CH as "SH" /ʃ/.

CK at the end of the word was read well by the FI group. There were no

consistent errors on this consonant digraph. Only 2 children pronounced the C as "S" /s/. One child pronounced these letters as "SH" /ʃ/, probably confusing CK with CH. The NG digraph was read poorly, but no consistent pattern of errors was apparent.

To summarize the children's reading of consonant sounds, the FI group's grade one reading performance shows interference on a few single consonant sounds: H, J, and X. However, in general, the transference from French to English on single consonant sounds is very good. Blends containing R show some French interference, as the uvular "R" is being used by some of the children, and, in blends where T ends the word, the T is sometimes not pronounced. However, difficulties in blending consonants do not seem to result from French interference or from not knowing the consonant sounds, but from having insufficient practice in blending. Digraphs are difficult for these children; they generally read the French sound for TH and CH: /t/ and /ʃ/. In any combination of letters with H, the children often pronounce the H as "SH" /ʃ/. They, like the ENG group, have difficulty with the less common digraphs KN, WR, and PH.

SUBTEST 4: READING VOWEL SOUNDS

The quantitative analysis of the scores from the Reading Vowel Sounds Subtest showed that the ENG group scored reliably better than the FI group (see Table 2).

Reading vowel sounds was the most difficult subtest for the FI group whose mean score was half that of the ENG group's (see Table 2). The FI group's instruction in vowel sounds appears to interfere with their English reading, as transference of vowel sounds from French to English is often inappropriate and results in an incorrect response. Reading vowel sounds was also the most difficult of the subtests for the ENG group.

In this subtest, as in Reading Consonant Sounds, the children were asked to sound out a list of make-believe English words. The FI group's errors show they used one of the following strategies to read these words:

1. Used English decoding skills (i.e., VAB as "VAB" /væb/).
2. Used French decoding skills (i.e., VUB as /vyb/).
3. Used the letter name (i.e., MOIT as "MOE-ITE" /moait /).
4. Used a combination of the above 3 strategies (i.e., MOIT as "MOE-IT" /mouit / or "MOE-EET" /moi:t/) or, they had no strategy to read the vowel sounds and, thus, gave no response.

Reading Short Vowel Sounds In The CVC Pattern

As expected, when reading short vowels which have a different pronunciation in French and English there is a greal deal of French interference: I is read as / i:/ and U is read as /y/. In those words where the vowels are pronounced the same in French and English, one would expect a great deal of transference from French to English. This tranference occurred with A but not with O. Perhaps the children in FI classes have not been introduced to O and therefore used the letter naming strategy most often (see Table 11).

TABLE 11

Reading Short Vowel Sounds, Mean Percent Correct

Vowel	Test Words	Percent Correct FI n=50	ENG n=56	FI Group Strategies French decoding	Letter name	Other (Including No Response)	
E	VEB	26%	82%	8%	43%	49%	
I	VIB	22%	87.5%	51%	31%	18%	
A	VAB	80%	91%	vowel sound is same as Eng.		60%	40%
O	VOR	18%	80%	vowel sound is same as Eng.		85%	15%
U	VUB	14%	84%	63%	26%	11%	

Reading Long Vowels In The CVCE Pattern

Neither the FI or the ENG groups scored particularly well in reading vowels in the CVCE pattern, just as neither group spelled this pattern well (see Table 12). Once again French reading instruction interferes substantially with reading vowels sounds in PABE, PIBE, and PUBE (see Col. 3, Table 12). Several children pronounced the final consonant-e as one might in French (i.e., /pæbʌ/). The FI group generally pronounced U as /y/, which closely approximates the correct English pronounciation as in tube. Only 1 child in the ENG. group pronounced U as /y/; the ENG group most often read U as in cute, following the CVCE rule exactly.

O, read correctly by many of the FI group, may have been read by using the letter name rather than by using the CVCE pattern. When one considers the FI group's low scores on the other vowels, this seems to be the most likely explanation for the FI group's correct responses.

TABLE 12

Reading Vowels In The CVCE Pattern, Mean Percent Correct

		Percent Correct		FI Group Strategies		
Words	Test	FI n=50	ENG n=56	French decoding	Eng. Short vowel	Other (including Vowels no response)
A	PABE	2%	77%	88%	vowel sound is same as French	12%
I	PIBE	18%	66%	52%	24%	24%
U	PUBE	50%	55%	61% *	13%	26%
E	PEBE	24%	66%	34%	30%	36%
O	POBE	46%	57%	41%	vowel sound is same as French	59%

*This 61% included those children who read PUBE as / / because, although scored as a correct answer and included in the 50% correct responses, this response was a result of French decoding.

Approximately 20% of all errors on this subtest seem to be a direct result of the FI group's unfamiliarity with the CVCE pattern. These children use the English short vowel sound (see Col. 4, Table 12), but, as the CVCE pattern is not used in French, they had no knowledge of it to transfer to their reading of English. Sixteen percent of the FI group used the short vowel sound consistently when reading CVCE words.

Reading Vowel Digraphs and Diphthongs

Vowel digraphs and diphthongs were generally read poorly by both groups, with a few exceptions (see Table 13). The inclusion of MAY in this subtest was due to an error in the test construction, and the high ENG score on this vowel digraph is probably because it was read as a sight word rather than by decoding the AY digraph. MEE was read well by both groups; here, the strategy of spelling the vowels to read the word probably greatly increased the number of FI group's correct responses. The OU and OW digraphs are transferable from French to English as the sounds they represent in both languages are similar. Thus, there were high scores on FOUP and FOW by the FI group.

TABLE 13

Reading Vowel Digraphs and Diphthongs, Mean Percent Correct

Vowels	Test Words	Percent Correct FI n=50	ENG n=56	% of errors due to Fr. decoding*
OY	MOY	24%	48%	16%
AY	MAY	38%	91%	32%
EE	MEE	62%	96%	47%
AI	MAIT	22%	64%	26%
OI	MOIT	12%	21%	23%
OU	FOUP	48%	25%	vowel sound is same as Eng.
EA	FEAP	18%	75%	0%
OW	FOW	62%	80%	22% **
AW	FAW	16%	34%	56%
OO	FOOP	36%	64%	--
OA	FOAP	22%	68%	32%

*Only the French decoding strategy is reported here as the other errors were too varied and inconsistent to reveal any pattern.

**Two readings for FOW were considered correct: "OW" as in cow or as in yellow. Of the 62% of the FI group who read FOW correctly, 22% read /fou/, which although correct, is also an instance of using French decoding strategies.

In reading vowel digraphs and diphthongs we again see some of the FI group using French decoding skills but, generally, the errors followed no consistent pattern. Some children read the vowel letter name, others read English short vowel sounds, and still others read a combination of letter names with English and French vowel sounds. The children obviously were unfamiliar with most of the vowel digraphs and

diphthongs.

Reading R-Controlled Vowels

Again both the FI and ENG groups scored poorly on the R-controlled vowels (see Table 14). OR and UR seem to be transferable from French. NOR, being a French word, was often read as such by the children, but then they changed their pronunciation to a more English sounding word. The same thing was done when the children read NUR. French interfering with English reading was also seen here, in reading NIR and NAR. The uvular "R" was used by about 7 children (14%) when reading each word.

TABLE 14

Reading R-Controlled Vowels, Mean Percent Correct

Vowels	Test Words	Percent Correct FI n=50	ENG n=56	FI Group Stragegies French decoding	Letter name	Other
IR	NIR	12%	30%	61%	21%	18%
OR	NOR	58%	75%	19%	38%	43%
ER	NER	16%	14%	17%	55%	28%
AR	NAR	48%	62.5%	62%	15%	23%
UR	NUR	50%	46%	56%	8%	36%

In summary, both groups scored poorly in reading vowel sounds. The FI group read all sounds poorly except those few letters and letter combinations which are pronounced similarly in French and English: A in the CVC pattern; OR, UR, U in the CVCE pattern; OU, and OW. O in the CVC pattern, although pronounced similarly in French and English, is not read well by the FI group.

The FI group, appears to use several strategies for reading the vowel sounds tested, but uses no one strategy consistently. It appears that, with a few exceptions, they are not familiar with decoding vowels. However, even if they could decode the vowel sounds using French decoding strategies, this would often produce an incorrect English response as the vowel sounds are very

different.

Oral Reading and Comprehension Test

Three passages from the Standard Reading Inventory (McCracken, 1966) were given to the children to read: a Pre-primer passage, a Primer passage, and a Grade one passage. Only if the child scored above 60% on the Total Comprehension section of the oral reading passage was the child asked to read the next, more difficult passage. All the ENG group read the Pre-primer passage. All but 7 FI children (86%) read the Pre-primer passage; those who did not, either began to read it and could not read any words and so were asked to stop reading or, they were not asked to try to read the passage because the tester judged, on the basis of their poor performance on the previous Reading and Decoding Test, that they would be unable to read it. In one case, a child simply made up a story, in English, which had no relationship to the print on the page. All the ENG group scored above 60% on the Pre-primer total comprehension section, so all were asked to read the Primer passage. However, only 44% of the FI group did well enough on the Pre-primer total comprehension section to go on to read the Primer selection. Ninety-three percent of the ENG group scored well enough on the Primer total comprehension section to then go on to read the Grade one passage compared to only 40% of the FI group.

Because of a misunderstanding between the examiners about the procedures that were to be followed during the Oral Reading test passages were given to both the ENG and FI groups under two different conditions. The different testing conditions are described below.

Testing Condition I (FI, n=31; ENG, n=45):

1. The children were told only the title of the story and, while reading, were told proper names if errors were made on names. No other errors were corrected by the tester.
2. The rate reflects only the children's reading, without examiner corrections or prompting.
3. Word recognition errors are those errors children made which change the meaning.
4. Total Accuracy is the sum of word recognition errors plus fluency errors (all other errors which do not change meaning, i.e., substitutions, repetitions, and self-corrections).
5. Comprehension was tested in two parts:
   a. Recall, in which the children were asked to tell everything they could about the story without the aid of the text, and
   b. Total Comprehension, where the children were expected to answer questions about information in the text which they did not give during the recall section. Total comprehension is the sum of items given during recall plus the number of questions answered correctly. Again the child did not use the text to answer those questions.

Testing Condition II (FI II, n=19; ENG II, n=11):

1. The children were given the passage to read and told the title, but if they made errors during oral reading or could not read a word at all, the examiner told them the correct word.
2. The rate reflects examiner corrections and promptings as well as the children's reading.

3. Word recognition errors: same as above.
4. Total Accuracy: same as above.
5. Comprehension was tested in one way only. The children were permitted to use the text to answer the questions which the examiner asked.

To quantitatively compare the FI and ENG children's performance on the Oral Reading and Comprehension Test, statistical analyses were done, one on each set of scores from each of the three oral reading passages administered under Testing Condition I and Testing Condition II.

Under Testing Condition I, analyses showed that the ENG group read better than the FI group on all the measures obtained from the Pre-primer passage (see Table 15). On the Primer passage, which was read by only those children who successfully comprehend the Pre-primer passage, the analyses showed no difference between the FI and ENG groups. On the Grade One passage, the analses again showed reliable differences between the FI and ENG grups, but this difference is only on the total comprehension section where the FI group scored better than the ENG group (see Table 15). However, one must remember that only 10 FI students read this passage compared to 41 ENG students. These 10 FI students are the exceptionally good English readers in their group, whereas the ENG group consisted of all children except those 4 poorest readers who did not successfully read the Primer passage.

Under Testing Condition II the statistical analyses showed reliable differences between the FI and ENG groups on all 3 oral reading passages. Further analyses showed that the ENG group's scores on reading rate and word recognition accuracy on all 3 passages are reliable better than the scores of the FI group (see Table 15). Also, on the Pre-primer and Grade one passages, statistical analyses showed that the ENG group's performance on the Total Accuracy sections is superior to the performance of the FI group.

Because the children who were tested under Condition II were helped with word recognition errors, which affected their total accuracy and comprehension, and because they were able to use the text to answer comprehension questions, a greater percentage of the group read each oral reading passage than under Testing Condition I. In Testing Condition I only 38.7% of the FI group read the Primer passage and only 32% read the Grade One Passage. In Condition II 52% of the FI group read both the Primer and Grade oral reading passages. Many of the FI children who read the Primer and Grade One passages under Testing Condition II probably would not have been asked to read these passages under Testing Condition I as their Total Comprehension scores would not have reached 60% without the help they were given on word recognition errors and the aid of the text to answer questions. Because more less-able readers went on to read the Primer and Grade One reading passages under Testing Condition II, their poorer scores deflated the group's mean. Thus, at all three reading levels the ENG group is found to be reading reliably better than the FI group.

As well as quantitative information about the FI group's oral rading, it is interesting to consider some qualitative data based on the FI children's errors in oral reading. Those FI children who were able to read the Grade 1 English passage made errors which one would expect only from good readers (Weber, 1970). This group's errors generally resulted from the children predicting an upcoming word, misreading the actual word because of their predictions, and then self-correcting.

Table 15

Results from Oral Reading and Comprehension Test; Mean Scores and Standard Deviations

Testing Condition I (FI, n=31, ENG n=45)

Variable	Pre-Primer Mean Scores (Standard Deviations) FI n=27	Pre-Primer Mean Scores (Standard Deviations) ENG n=45	Primer Mean Scores (Standard Deviations) FI n=12	Primer Mean Scores (Standard Deviations) ENG n=45	Grade One Mean Scores (Standard Deviations) FI n=10	Grade One Mean Scores (Standard Deviations) ENG n=41
Rate (WPM)	38.25* (39.32)	91.31 (44.96)	69.08 (44.19)	89.93 (43.03)	67.90 (43.28)	80.80 (41.23)
Word Recognition Accuracy	65%* (15.42)	99% (1.25)	95% (5.17)	98.5% (1.89)	97% (2.86)	98% (2.94)
Total Accuracy	54%* (17.41)	96% (1.59)	90% (6.84)	93% (4.19)	89% (7.21)	93% (5.16)
Recall Comprehension	32%* (1.84)	59% (1.53)	37% (1.92)	37.5% (1.71)	51% (2.07)	50% (1.61)
Total Comprehension	50%* (2.22)	96% (.45)	76% (1.92)	82% (1.39)	87%* (1.41)	78.5% (1.01)

* $p < .05$

(Table 15 cont.)

Testing Condition II (FI, n=19, ENG, n= 11)

Variable	Pre-Primer Mean Scores (Standard Deviations) FI n=14	Pre-Primer Mean Scores (Standard Deviations) ENG n=11	Primer Mean Scores (Standard Deviations) FI n=10	Primer Mean Scores (Standard Deviations) ENG n=11	Grade One Mean Scores (Standard Deviations) FI n=10	Grade One Mean Scores (Standard Deviations) ENG n=11
Rate (WPM)	37.57* (36.62)	94.0 (40.78)	44.90* (30.38)	81.81 (39.45)	34.90* (30.04)	71.36 (39.52)
Word Recognition Accuracy	78%* (10.59)	99.6% (.40)	89%* (6.28)	99% (1.19)	86%* (7.93)	97% (1.97)
Total Accuracy	77%* (10.99)	94% (2.64)	88% (6.92)	94% (2.96)	84%* (8.90)	94% (3.55)
Total Comprehension	81% (1.54)	94% (.65)	91% (1.10)	98% (.40)	81% (1.52)	89% (.83)

* $p < .05$

There were 21 FI children who could not read further than the Pre-primer passage. Of these, 46% read the passage as if it were French rather than English text. For example, one child read MOTHER LOOKED UP as /moti:ar lu:kedyp/. These children read with a French accent and used French decoding skills. Other children in the FI group who found it very difficult to read the Pre-primer passage, attempted to use the initial letter in a word to produce an English word; this usually resulted in an incorrect response which rarely made sense. For example, one FI child read I SEE SOMETHING YOU PLAY WITH, SAID MOTHER as "'I SIT SO MUCH YOU PLAY WILL,' SO OH MUM."

The kinds of English decoding errors seen in the previous Reading and Decoding Test which were due to FI children inappropriately transferring French decoding skills to English words also surfaced in the Oral Reading Test. French decoding particularly interfered in reading the vowels U and I and in reading the consonant digraphs TH and CH. Thus, UP was often read as /yp/, WITH was often read as /wi:t/ and CHILDREN was often read as /ʃi:ldə/.

Maze Test

Statistical analyses done on the scores from the Maze Test show that the ENG group scored reliably better than the FI group on the number correct on each page of the test and on the total time taken to complete the task (see Table 16).

Most of the FI group scored very poorly on this measure of silent reading comprehension. All the FI children appeared to attempt to read the passages and do the task, but for most of the children it proved to be far too difficult. Fifty percent of the FI group used the maximum time, 10 minutes, to do this Maze Test, whereas only 1 child in the ENG group required the full time. And, although many of the FI group took the maximum time, 27.5% of their responses in the second passage were omissions compared to only 7% omissions by the ENG group on the second passage.

TABLE 16

Maze Test Results; Means, Standard Deviation, and Range

	Mean Scores (Standard Deviations) FI n=50	ENG n=55[a]
Mean Score, Page 1 (max. 7)	3.34* (2.28)	5.69 (1.43)
Mean Score, Page 2 (max. 8)	3.06* (2.72)	6.24 (1.99)
Mean Total Score (max. 15)	6.4	11.92
Mean Total Time (max. 10 min.)	7.98* (2.52)	5.02 (2.28)
Mean Omissions (max. 15)	3.52	.62
Range	0 - 15	3 - 15

[a] change in n due to a child's absence over 3 testing sessions

* $p < .001$

Teacher Interview

All the teachers of the FI and ENG children were interviewed to examine some of their Language Arts activities. There were 4 FI teachers and 7 ENG teachers involved. Each was extremely cooperative and willing to give information about their Language Arts program. The results were as follows:

1. Reading Aloud

All the ENG teachers and all but one FI teacher read aloud to their class in the language of instruction. One FI teacher did not read aloud because she felt the vocabulary in a French story was too advanced for the children in her grade 1 FI class. Two of the FI teachers occasionally read to their class in English because the children requested it. One FI class exchanged with an ENG grade 1 class in the school twice a week for stories in English.

2. Use of the Library

All the children used the school library. In one FI school the children borrowed French books only, one per week, while in the other FI school the children borrowed one French and one English book per week. These teachers reported that the FI children preferred the English books, and when given a choice by the librarian as to which she would read to them, English or French, they generally chose English.

3. Silent Reading

Only one of the FI classes did not have a silent reading period in their classroom. Three of the ENG classes did not have a scheduled silent reading period, but these teachers reported that the children in their classes read silently everyday. All other FI and ENG classes have silent reading periods every day in the language of instruction. In all classes the children read library books and readers during this time.

4. Writing

All but one of the FI classes spent instructional time on writing. Two FI teachers had children in their classes who write stories once a week. Six of the ENG teachers had their classes write daily journals, and 4 of the ENG teachers had the children write stories occasionally. Only 1 ENG teacher reported that the children in her class did not write very often.

5. FI teachers instructing in English Language Arts

None of the FI teachers give help or instruction in either reading or in writing English. As one teacher said "This is French Immersion. They get English all the time outside of school."

Parent Interview

A random sample of parents from both the FI and ENG groups was interviewed over the telephone. This was done to determine if there were any differences between the parents' attitudes about reading or in how they help their children with reading. All parents were willing and eager to talk with the researcher, and seemed supportive of the research project and most interested in their child's reading development. The results were as follows:

1. Do you read aloud to your child?

All but one FI parent read aloud to her/his child. The one parent who did not read aloud used to do so but now her child is an independent reader and reads for himself. Sixty-five percent of the FI parents read aloud daily, and 30% said they read aloud on most days.

Of the ENG parents, 78% read aloud to their children. Of those parents who did not read aloud, only one of the parents used to do so but does not any longer, because her child reads independently now. The remaining parents said they did not read aloud to their children.

Only 23% of the ENG parents read aloud everyday to their child; 15% read aloud most days, 23% read aloud about twice a week and 15% rarely read aloud.

2. FI parents: In what language do you read to your child?

The 95% of the FI parents who read aloud to their child were asked whether they read in French or in English. Forty-two percent of the parents read only in English, 16% read only in French, and 42% read aloud in both languages.

3. Does your child read at home?

Forty-five percent of the FI parents said their child read at home; 40% said their child read only a little at home because their child was just beginning to learn how to read; and 15% of the FI parents said their child did not read at home, but these parents added that their child did look at books and that the reason why their child did not read at home was because he/she could not read yet.

Ninety-two percent of the ENG groups' parents said their child read at home. Only 4% of the parents said their child only read a little and another 4% said their child never read at home.

4. FI parents: In what language does your child read?

The FI parents were asked if their child read French or English books at home. Of those children who do often read at home, 66% read only English books, 22% read only French books, and 12% read both French and English books. Of those children who read a little at home, none read only English; 37.5% only read French books; and 62.5% read both French and English books.

5. Do you and your child use the Public Library?

The majority of parents in both groups used the public library with their child. Of the FI parents, 60% used it often, 10% used it rarely, and 30% did not use the public library at all. Of the ENG parents, 54% used if often, 4%

used it rarely, and 42% never used the public library with their child.

6. FI parents: In what language are the books you borrow from the library?

If the parents used the library they were asked if they borrowed French or English books. Fifty-eight percent of the parents said they borrowed only English books, 42% said they borrowed both French and English books, and no parents in the FI group borrowed only French books.

7. The child's place in the family.

This question revealed no interesting results.

8. Television habits.

The results showed that the majority of both FI and ENG groups watched television.

Most children in both groups watched cartoons and public television children's programmes. Most of the children watched Sesame Street when they were younger. Some children now watch situation comedies and adventure shows.

Most parents in both groups felt their children had received some valuable learning from watching television (80% of the FI parents and 69% of the ENG parents).

9. FI parents: Does your child watch French TV?

According to their parents, 40% of the FI group watched some French television while 60% of the FI group watched only English television.

10. Do you help your child with reading?

The majority of parents in both groups said they helped their child with reading. Of the FI parents, 80% helped their child a lot, 5% a little and 15% did not help their children. When asked why they did not help their child with reading the parents said their child was "not keen" on reading, did not need help because he could read himself now, or because their child was not reading yet and so they could not help yet, but that they did continue to read

aloud to their child.

Of the ENG parents, 76% said they helped their child a lot with reading, 12% helped a little, and 12% did not help their children with reading. Those who did not help their children with reading did not feel they needed to because their children were independent readers, or their children were highly motivated and practiced reading without their parents' help.

Most parents in both groups helped their child with reading by helping to sound out words, or by telling the correct word if their child could not sound it out.

11. FI parents: In what language do you help your child to read?

The majority of FI parents helped their child to read English (52%). Only 18% of the parents helped their child only in French and 30% helped their child in both languages. Many of the parents said they could not read French well enough to help their child.

At one FI school, parents were urged not to teach their children how to read English at home to avoid confusing the children. Perhaps even more of the FI parents would have helped their children to read English if this request had not been made by the school.

"Good English Readers"

A subset of the FI and ENG groups was able to read successfully the grade 1 oral reading passage with 60% or better total comprehension. These children, tested at the end of grade 1, demonstrated their ability to read grade 1 material and thus were labelled "Good English Readers". Quantitative and qualitative analyses were done to compare the performance of the FI and ENG "Good English Readers".

The 10 FI and 41 ENG children who read the Grade One passage under

Testing Condition I were included in this group. Those 2 FI and 4 ENG children in Testing Condition II, who successfully read the Grade One passage without help or prompting from the examiner, were also included because their performance was independent of the examiner. Table 17 shows the results from the Oral Reading and Comprehension Test for the 12 FI and 45 ENG "Good English Readers".

Statistical analyses were performed on the scores obtained by the "Good English Readers" on the Reading and Decoding Test. These analyses showed that the ENG group of "Good English Readers" scored reliably better than the FI group on the Spelling Common Words Subtest and on the Reading Vowel Sounds Subtest. However there were no differences between the groups on the Reading Common Words or Reading Consonant Sounds Subtests (see Table 18).

TABLE 17

Results from Oral Reading and Comprehension Test, "Good English Readers",

Mean Scores and Standard Deviations

Testing Condition I (FI, n=31, ENG n=45)

	Pre-Primer		Primer		Grade One	
	Mean Scores (Standard Deviations)		Mean Scores (Standard Deviations)		Mean Scores (Standard Deviations)	
ariable	FI n=12	ENG n=45	FI n=12	ENG n=45	FI n=12	ENG n=45
ate (WPM)	81.08 (40.08)	98.73 (35.87)	80.92 (49.96)	97.87 (40.80)	71.42 (40.45)	83.89 (41.30)
ord Recognition ccuracy	97% (1.66)	99% (.94)	98.5% (1.35)	99% (.97)	97% (2.75)	98% (2.83)
otal Accuracy	94% (3.53)	97% (1.44)	94% (3.74)	95% (3.22)	91% (7.12)	93% (5.06)
ecall omprehension[a]	74% (1.25)	57% (1.53)	41% (1.66)	39% (1.68)	51% (2.08)	50.5% (1.61)
otal omprehension	95% (.62)	96% (.46)	85% (1.44)	86% (1.03)	89% (1.38)	79.6% (1.04)

[a] For recall comprehension only, FI, n=10 and ENG n=41, because under Testing Condition II recall comprehension was not tested.

TABLE 18

Results from the Reading and Decoding Test, "Good English Readers", Mean Scores and Standard Deviations

	Mean Scores (Standard Deviations)	
	FI n=12	ENG n=45
Ratio of Correct Words Per Minute	53.58 (55.56)	54.54 (40.86)
Analysis (max. 20)	17.50 (3.18)	17.07 (2.96)
Spelling Common Words (max. 37)	28.16* (4.68)	33.29 (3.09)
Reading Consonant Sounds (max. 60)	53.00 (3.62)	53.87 (4.88)
Reading Vowel Sounds (max. 26)	13.00* (4.71)	16.64 (4.84)

* $p < .05$

A qualitative analysis to determine the strategies used by the FI "Good English Readers" was done on the two subtests where reliable differences were found between the FI and ENG groups. In the Spelling Common Words Subtest, analysis revealed many of the same errors seen in the total FI group. Particularly, these 12 FI children found it difficult to spell the consonant blends MP (33% correct) and STR (50% correct); the consonant digraph NG (41% correct); and the CVCE pattern (25% correct). Errors on the consonant digraphs, SH, CH and TH also occurred (66% correct). Some of this group's spelling errors resulted from an unfamiliarity with encoding an English

spelling pattern (i.e., the CVCE pattern).

Examination of the performance of the FI "Good English Readers" on the Reading Vowel Sounds Subtest showed that these children seem to be more consistent in the strategies they use to read vowel sounds than the total FI group. Of the errors made when reading the CVC pattern, 44% resulted from pronouncing the make-believe words as French words. When reading the CVCE pattern, these children either read it correctly (18%), pronounced it as a French word (47%), or read the CVCE pattern as the CVC pattern (35%). The children scored quite well on the 11 make-believe words containing the more unfamiliar vowel digraphs and diphthongs, reading them correctly 59% of the time. When errors occurred, the strategy generally used was to sound out each letter of the digraph or diphthong. Fifty-three percent of the children correctly read the R-controlled vowels. Of the errors on this set of vowels, 61% resulted from the children pronouncing the words as a French word. In summary, on the Reading Vowel Sounds Subtest we see some interference from French reading instruction even for these "Good English Readers" when they are asked to read make-believe words constructed from more difficult spelling patterns.

Statistical analyses performed on the scores obtained by the "Good English Readers" on the Maze Test showed no difference between the two groups on the total score, but a reliably better performance by the ENG group on the total time taken (see Table 19). Rather than indicating a difference in reading ability, this difference can be explained as a result of the FI group's lack of practice in doing this type of task in English.

TABLE 19

Maze Test Results for "Good English Readers";

Mean Scores and Deviations

	Mean Scores (Standard Deviations)	
	FI n=12	ENG n=45
Total Time (max. 10 minutes)	6.33* (2.64)	4.49 (2.11)
Total Score (max. 15)	11.75 (4.88)	12.53 (2.25)

* $p < .05$

LaBerge and Samuels in their Model of Automaticity in Reading state that in the process of becoming a fluent reader, reading subskills become automatic and thus, the fluent reader needs to pay attention only to meaning. In contrast, children who are just learning to read must give a majority of their attention to decoding the visual symbols as their decoding subskills are not yet automatic. Both the FI and ENG children involved in this research are beginning readers. One would not expect many children in either group to have reached a level of automaticity in decoding subskills as yet. One might also expect that, because the FI children are learning to read in French and do not have instructional time in reading English or practice in reading English at school, their decoding subskills may not be as proficient as those of the ENG group.

One way to measure the proficiency of decoding subskills, or level of

automaticity, is through reading rate. A slower rate suggests that children are less proficient in decoding subskills and thus may pay closer attention to decoding the visual symbols. A faster rate suggests a greater proficiency of decoding subskills.

A statistical analysis was performed on all the rate measures obtained from the "Good English Readers". This was done to ascertain whether a difference in the level of proficiency of decoding subskills existed between the "Good English Readers" in the FI and ENG groups. These rate measures were:

1. Fast reading time in the Reading Common Words Subtest
2. Total Time taken to complete the Maze Test
3. Oral reading rate, Pre-Primer passage
4. Oral reading rate, Primer passage
5. Oral reading rate, Grade One passage.

The analysis revealed no differences between the two groups on these measures. Further, the analysis reported of the groups' performance on the Reading and Decoding Test (see Table 18) revealed no differences on the Ratio of Correct Words per Minute. These results suggest that the FI group of "Good English Readers" are as proficient in decoding subskills as the ENG group.

Proficiency or automaticity of decoding subskills is increased through practicing decoding skills (LaBerge & Samuels, 1974). Because the FI group has obtained a level of proficiency in decoding subskills very similar to that level reached by the "Good English Readers" in the ENG group, one must conclude that, in order for them to have reached this level of proficiency, they must be practicing a substantial amount of English reading at home as they are not practicing English reading in school. As the results of the parent interviews show, all FI children are read to at home, usually in

English; many of the children read at home in English and most FI parents help their children with English reading skills.

Discussion

This present study adds support to previous research which shows that grade 1 French Immersion (FI) children do not read English as well as their English (ENG) peers. The purpose of this present study was not simply to reconfirm this difference in the English reading ability between these two groups of children, but to delineate this difference. The difference between the FI and ENG groups can be described as a difference in reading strategies which grade 1 FI and ENG children use to read English materials.

Not unexpectedly, in this study those children who were taught to read in regular English classrooms had only one kind of reading strategy to use: English reading strategies. In contrast to the ENG group, the FI children can be characterized as using three different strategies when reading English material, 1) english reading strategies, 2) french reading strategies, 3) combination of French and English reading strategies, or as having no strategy to use.

A number of the FI children tested here (24%) generally read English very well, used English reading strategies very much like those used by the ENG group. The "Good English Readers" primarily used English reading strategies when reading familiar or unfamiliar words presented in context. However, when reading real or make-believe words in isolation, some interference from their French decoding skills was seen. This group of FI children are quickly learning to distinguish when and for what materials their French decoding skills are appropriate and when their English decoding skills should be used.

As expected, other children in the FI group (22%) used only French decoding strategies to read English materials. When reading English words

aloud they pronounced them as French words. These children are "French-decoders". Unlike the "Good English Readers" who can use both French and English reading strategies, these children appear only to be able to use French reading strategies.

A third group of FI children (38%) seemed to be using a combination of French and English reading strategies to read English. However, their English reading skills are not as advanced as those of the "Good English Readers". These children used what could be called English pre-reading skills (i.e., letter names and guessing at vowel sounds). By using their limited English reading skills in combination with their French reading skills, this group of children usually read real English words, but rarely read the correct English word. These children are not limited to pronouncing English as French when reading English because, unlike the "French-decoders", they can use some English reading strategies.

The final group of FI children (16%) usually gave no response. These children had very poor French reading skills. They could not use those skills when reading English materials because they had difficulty in using French skills on French materials. They seemed to have no reading strategy to use.

The FI children's errors on the Reading and Decoding Test clearly show that elements of their French reading skills are appropriate to transfer to English reading and that other elements interfere with their English reading. This research shows that single consonant sounds transfer well from reading French to reading English, that A in the CVC pattern, U in the CVCE pattern and the vowel combinations UR, OR, OU and OW, transfer well from French to English. This research also shows that significant interference from French to English reading occurs on the consonant digraphs SH, TH, and CH; the single consonant sounds R, X, and J; and on I and U in the CVC

pattern. These elements interfered even when the FI children who were "Good English Readers" read make-believe or real words out of context.

In fact, those elements of French reading which actually interfere with English reading are very few and, in themselves, are not enough to explain all the difficulties observed here. The performance of the 3 groups of FI children who had problems reading English, and of some of the "Good English Readers", also seem to be affected by a lack of knowledge of certain reading skills. These children are poor at blending consonant sounds, they do not know certain consonant digraphs, and they are not sure of the sound represented by O in the CVC pattern. These reading skills, common to both French and English, will improve through instruction and practice in French, and this improvement should be reflected in the FI children's English reading performance.

There are, of course, English reading skills that some FI children will not have, even when they do become good French readers. These skills are not common to French and English, and to read English as well the children will need to be taught these skills (e.g., the CVCE pattern, certain vowel sounds). Also, of course, to read English well, the children will need to be taught about those elements of French described earlier, which interfere with English.

The teacher interviews showed that the FI and ENG classes are very similar except for the language of instruction. All the classes but one FI class read silently daily in their language of instruction; all but one FI class and one ENG class often did writing tasks which the teacher considered suitable for the children's skill level; all the classes used the school library; and all teachers, except one FI teacher, read daily to their class. Not unexpectedly, FI teachers did not give the children in their classes

instruction in English Language Arts, except that two FI teachers occasionally read English stories to their classes.

Because researchers have questioned whether parental involvement in the reading process has facilitated the transfer of reading skills from French to English (Edwards, 1976; Barik & Swain, 1976, Cummins, 1977; Genesee, 1979) this research has attempted to identify, through parent interviews, some features of this parental involvement. The parent interviews did show an interesting differnce between the FI and ENG groups: FI parents read to their children more often than ENG parents. In fact, all FI parents, except one whose child was an independent reader, regularly read aloud to their children, and usually in English. Most FI parents helped their children with English reading skills at home, even though one FI school asked parents not to do so. Also, many FI children practice reading English at home. For some children, "The Good English Readers", this practice appears to have been substantial, as they have reached the same level of proficiency in their decoding subskills as those "Good English Readers" in the ENG group.

Researchers have known that French Immersion children begin to transfer the reading skills they have learnt through French reading instruction to reading English even before English Language Arts is introduced as a subject (Edwards, 1976; Shapson & Kaufman, 1978; Genesee, 1979; Swain & Lapkin, 1981). However, research to this time has not shown "precisely what is being transferred" (Genesee, 1979, p. 74). The research described here has attempted to show how grade 1 French Immersion children are transferring their reading skills to their native language.

This research has found that as early as grade 1 some French Immersion children are very good English readers. These children read English almost as well as those children instructed in English. Other French Immersion chidren

have not yet learned to read in French and so have no reading skills to transfer to reading English. Some French Immersion children inappropriately transfer French decoding skills directly to English, while still others are beginning to determine when French decoding skills are appropriate to use and when they are not. This last group of children are beginning to acquire a set of particular decoding skills to use when they are reading English.

Also, this research has shown that as early as grade 1, two distinct groups of French Immersion children are emerging: those who can read English well, and those who cannot. When these children reach grade 3, the grade when English reading instruction is introduced, one would expect that thse two ability groups would still exist. One would also expect that the number of children who are in the group of "Good English Readers" would increase. At this grade level, then, if these two groups of FI children's instructional needs are to be met, each group will require substantially different English Language Arts instruction.

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POOR

QUALITY

ORIGINAL